IN THE UNITED STATED PATENT AND TRADEMARK OFFICE

Applicant: TSUNEMATSU, K. Group Art Unit: 2833
Serial No.: 10/084,301 Examiner: PAUMEN, GARY F.
Filed: 02/28/02
Title: ELECTRICAL CONNECTOR FOR A FLAT CABLE

BRIEF ON APPEAL

Assistant Commissioner of Patents Submitted: 12/03/03
Washington, D.C. 20231

Dear Sir:

Following the Notice of Appeal filed October 3, 2003, appellant hereby submits in triplicate a brief in support of the appeal together with the requisite fee of $330.00.

## Real Party in Interest

Real party in interest is assignee, Hirose Electric Co., Ltd., a corporation of Japan, having a place of business at 5-23 Oosaki 5-chome, Shinagawa-ku, Tokyo, Japan.

## Related Appeals and Interferences

Appellant, appellant's legal representative, or assignee does not know any related appeal or interference.

## Status of the Claims

On 02/28/02, appellant filed the above-identified application with claims 1-9, claiming priority right based upon Japanese Patent application No. 2001-83959 filed 03/23/01.

On 02/14/03, appellant filed a response to the restriction requirement in the Office Action mailed 01/16/03, electing claims 1-4.

On 06/18/03, appellant filed a reply to non-final office action mailed 03/18/03 that withdrew claims 2-9. In the reply, appellant requested for the withdrawal of withdrawing claims 2-4 and amended claim 1.

On 09/03/03, appellant filed a reply to the final Office Action mailed 07/03/03 that withdrew the previous decision of withdrawing claims 2-4 and rejected claim 1-4. In the reply, appellant amended claim 4.

On 09/26/03, appellant filed a reply to the Advisory Action mailed 09/17/03 that objected claim 4 and rejected claims 1-3. In the reply, appellant amended claim 4 again. Appellant received a secondary Advisory Action mailed 10/15/03 that allowed claim 4 and rejected claim 1-3.

On 10/03/03, appellant filed a Notice of Appeal in response to the Advisory Action of 09/17/03.

Thus, the status of all the claims are summarized as follows:

Claims 1-3 are pending and appealed.

Claim 4 is allowed.

Claims 5-9 are pending and withdrawn.

A copy of the claims involved in the Appeal is attached to the end of this brief.

## Status of the Amendments

Subsequent to the final rejection of 08/21/02, appellant amended claim 4 on 09/03/03 and 09/26/03, which were entered, and claim 4 was allowed.

## Summary of the Invention

One of problems of conventional electrical connectors for a flat cable is that the position of the pressure member (56 in Fig. 5) is unstable because it is not held securely at the open position and sometimes it turns over to the closed position unintentionally at the times of inserting a flat cable (specification, page 2, lines 3-7).

In order to solve the problem, appellant's invention comprises, as claimed in claims 1-3, the housing (1), a plurality of the terminals (2) arranged in the housing, the pressure member (15) rotatable about the rotational axis (18A) thereof between the open and closed positions, a plurality of the bearing sections (11) provided in the terminals (2) to support the rotational axis, and a plurality of engaging sections provided in the terminals (2) and the pressure member (15) for holding the pressure member at the open position. The shoulders (10), which are the engaging sections of the terminals, and the bottom (17A) of the groove (17), which is the engaging section of the pressure member, engage each other at the open position of the pressure member to hold the pressure member (specification, page 8, 20-23). Since the pressure member is supported by a plurality of terminals provided in

substantially entire width of the housing, the pressure member is held securely at the open position.

As defined in claim 2, the engaging sections are formed in a plane parallel to the rotational axis (18A) of the pressure member. That is, in Fig. 1, the bottom of the groove of the pressure member and a series of the shoulders of the terminals extend in parallel to the rotational axis (18A). Namely, all of the bottom, the series of the shoulder, and the rotational axis extend in a direction perpendicular to the drawing sheet.

As claimed in claim 3, the engaging sections may be formed in a plane perpendicular to the rotational axis. For example, in Fig. 1, if the groove (slits) of the pressure member is made narrower as the pressure member rotates toward the open position, the inner surface or the side walls of the slits push the terminal tightly at the open position. This tightly pushing force works as engaging force (specification, page 12, lines 4-15). The inner surface or side walls of the slits and the side surfaces of the terminal are formed in a plane perpendicular to the rotational axis.

## Issues

On page 2 of the final Office Action of 07/03/03, claim 3 was rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enabling requirement. The Action states that the claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention.

Thus, the first issue is whether or not appellant's invention recited in claim 3 is described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

On page 2 of the Action, claims 1-4 (claim 4 was allowed) were rejected under 35 U.S.C. 102(e) as being anticipated by Higashiguchi et al. ('346).

Thus, the second issue is whether or not appellant's invention recited in claims 1-3 are patentable over Higashiguchi et al.

## Argument

With respect to the first issue, the specification clearly describes on page 12, lines 4-15 that the engaging section may be formed by a rectangular surface (a plane perpendicular) to the rotational axis. In addition, the specification describes an example how to form the engaing sections provided in a plane perpendicular to the rotational axis. That is, in Fig. 1, if the groove (slits) of the pressure member is made tapered to be narrower as the pressure member rotates toward the open position, the inner surface or side walls of the slits pushes the side surfaces of the terminal tightly at the open position. This tightly pushing force works as engaging force to hold the pressure member at the open position. In this case, the inner surface or side walls of the slit and the side surfaces of the terminal are formed in a plane perpendicular to the

rotational axis. Thus, it is believed that the subject matter is described in the specification.

With respect to the second issue, Higashiguchi et al. discloses the housing (12), terminals (13) fixed in the housing (12), the pressure member (14) rotatable about the pivot portion (16) between the open and closed positions, a plurality of the bearing sections (17) provided in the terminals, and a pair of the engaging sections (22 and 24) provided in the pressure member and the housing. The engaging sections of the pressure member are the protruding portions (22) and those of the hosing are the protrusion-receiving portions (23). The protruding portions and the protruding-receiving portions are provided at both ends of the housing in the right and left directions and engage with each other to hold the pressure member at the open position (column 3, line 55 to column 4, line 1).

However, Higashiguchi does not disclose or suggest any engaging section provided on the terminal and the pressure member for holding the pressure member at the open position. That is, in Higashiguchi, the pressure member comprises an engagement section (protruding portion) but the terminal does not have any engagement section. In Higashiguchi, the housing comprises an engagement section (protruding-receiving portion) to engage with the engagement section of the pressure member.

The Action states that the section 17 (concavity of the pivot portion 16) of some of the terminals can be considered bearing sections, while sections 17 of the rest of the terminals can be considered engaging sections. The Action also states that in Fig. 2 of Higashiguchi, the

pressure member is held in the open position by engagement between 17 (bearing section) and 21 (cam portion).

However, Higashiguchi describes in column 3, lines 46-54 that the cam portions 21 of the pressure member 14 are positioned in the concavities 17 of the pivot portions 16 of the terminal 13 so that the pressure member 14 is rotatable around the pivot portions 16. Thus, Higashiguchi clearly discloses that the concavities 17 are bearing sections. Higashiguchi does not disclose or suggest that the concavities 17 of some terminals are engaging sections. In Fig. 2, the pressure member 14 is rotatably supported by the engagement between the concavities 17 and the cam portions 21. However, the pressure member cannot be held securely at the open position because the bottom of the hole 19 of the pressure member 14 is spaced from the upper surface of the pivot portion 16 of the terminal 13 so that no engagement force is produced to hold the pressure member at the open position. On the other hand, in Fig. 1(A) of appellant's invention, the bottom (17A) of the groove (17) of the pressure member (15) contacts with the shoulder (10) of the upper arm (4) of the terminal (2) to produce the engagement force to hold the pressure member at the open position.

Higashiguchi's engaging sections are a pair of the protruding portions 22 of the pressure member 14 and a pair of the protruding-receiving portions 23 of the housing 12 (column 3, line 55 to column 4, line 1). Fig. 3 shows that the pressure member 14 is held at the open position by the engagement between the protruding portion 22 of the pressure member and the protruding-receiving portion 23 of the housing 12. Thus, in Higashiguchi, one of the engaging

sections is provided in the housing not in the terminal. Also, the engagement force of Higashiguchi is considered smaller than that of appellant because the engaging sections (22 and 23) are provided only on both ends of the housing, while appellant's engaging section (10 and 17A) are present substantially entire width of the housing (Fig. 3).

For these reasons it is believed that appellant's invention recited claims 1-3 is patentable over Higashiguchi et al.

In view of the foregoing, it is respectfully solicited that Examiner's rejection to claims 1-3 under 35 U.S.C. 112, first paragraph and 102(b) be reversed by the honorable Board of Appeal.

Respectfully submitted,

Satoru Takeuchi
Reg. No. 53,670
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Date: 12/03/03

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APPENDIX

CLAIMS ON APPEAL

1. An electrical connector for a flat cable, comprising:

a housing having an open mouth;

a plurality of terminals which are arranged and maintained in said housing and have contact sections at positions facing said open mouth of said housing;

a pressure member rotatable about a rotational axis and between an open position where said flat cable is inserted from said open mouth into an insertion space and arranged on said contact sections and a closed position where said flat cable is pressed towards said contact sections, said rotational axis being opposed to said contact sections with respect to said flat cable;

a plurality of bearing sections provided on said terminals to support said rotational axis for rotation of said pressure member at said rotational axis; and

a plurality of engaging sections provided on said terminals and said pressure member for holding said pressure member at said open position by an engaging force generated by concerted movement of said terminals and said pressure member.

2. An electrical connector of claim 1, wherein said engaging sections are formed in a plane parallel to said rotational axis.

3. An electrical connector according to claim 1, wherein said engaging sections are formed in a plane

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a plurality of bearing sections provided on said terminals to support said rotational axis for rotation of said pressure member at said rotational axis; and

a plurality of engaging sections provided on said terminals and said pressure member for holding said pressure member at said open position by an engaging force generated by concerted movement of said terminals and said pressure member.

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